

# Heteroptera (Hemiptera: Prosorrhyncha) New to Canada. Part 2

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## ABSTRACT

The occurrence of an additional six species of true bugs newly recognized in Canada is documented. New US state records are given for two pentatomid species, and a key to the species of *Neottiglossa* Kirby in Canada is included.

## INTRODUCTION

In a previous paper (Scudder 2000), 34 species of true bugs newly recognized in Canada was documented. At that time, it was noted that additional species would be published in Part 2, when all determinations had been confirmed.

In the intervening period, additional species have been included in publications by Schuh (2001), Schwartz and Scudder (2001, 2003) and Paiero *et al.* (2004).

I now report an additional six species new to Canada.

Museum abbreviations used in the text are as follows:

APM: Alberta Provincial Museum,

Edmonton, AB.

CNC: Canadian National Collection of Insects, Agriculture and Agri-Food Canada, Ottawa, ON.

LM: Lyman Entomological Museum, Macdonald College, McGill University, Ste.-Anne-de-Bellevue, QC.

PFC: Pacific Forestry Centre, Natural Resources Canada, Victoria, BC.

UA: Strickland Museum, University of Alberta, Edmonton, AB.

UBC: Spencer Entomological Museum, Department of Zoology, University of British Columbia, Vancouver, B.C.

## SPECIES NEW TO CANADA

### Family CYDNIDAE

*Amnestus basidentatus* Froeschner

QC: 2♂ 2♀, Aylmer, lumière, Boisé décidu., 29.v.1989 (L. LeSage) [CNC].

This species has been swept from grass, and occurs from New York south to Florida and Cuba, and west to Missouri and Texas (Froeschner 1960). A key to separate *A. basidentatus* from the other three species of *Amnestus* Dallas that occur in Canada (Maw *et al.* 2000) is provided by McPherson (1982). *A. basidentatus* has four marginal pegs on each juga, and the male has a characteristic anterior subbasal tooth on the front tibia, giving this segment a notched appearance on its inner surface. The ventral subapical spine on the hind

femur of the male is also shorter than the width of the femur, while in the female, the last abdominal sternum lacks a flattened glabrous area.

### Family MIRIDAE

*Pinophylus carneolus* (Knight)

SK: 1♂, Nipawin, Jack pine, 7.vi.1968 (FIS 605) [CNC].

The genus *Pinophylus* Schwartz & Schuh was described by Schwartz and Schuh (1999) with three contained species, one of which *P. rolfsi* (Knight), was reported from Alberta, British Columbia and Yukon, and south to Oregon and Colorado. *Pinophylus carneolus* was reported from District of Columbia, Maryland, North Carolina, Pennsylvania, Virginia, West

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Virginia and Wisconsin, and like *P. rolfsi* is strongly sexually dimorphic. *P. carneolus* is distinguished from *P. rolfsi* by the slightly reddish brown coloration, and the form of the male genitalia in which the vesica is more strongly curved than in *P. rolfsi*. *P. carneolus* is reported to breed on Virginia pine, *Pinus virginiana* Mill. in the United States (Knight 1927; Schwartz and Schuh 1999).

#### Family PENTATOMIDAE

##### *Neottiglossa sulcifrons* Stål

SK: 1♀, Indian Head, Aspen Grove, 3.viii. 1939 (C.R. Douglas) [CNC].

Four species of the genus *Neottiglossa* Kirby are now known from Canada. Two of these, *N. trilineata* (Kirby) and *N. undata* (Say), occur across Canada from Yukon to Newfoundland, while *N. tumidifrons* Downes is confined to British Columbia in Canada (Maw *et al.* 2000). The following key modified from that in Rider (1989), will separate the species of *Neottiglossa* now known from Canada.

1. Coxae pale yellow; evaporative surface on pterothorax ventrally pale yellow to brown-grey with contrasting black punctures .....2

-Coxae fuscous to black; evaporative surfaces on pterothorax ventrally black with concolorous punctures .....3

2. Dorsal surface of head and propleura mostly black with concolorous punctures ..... *strilineata* (Kirby)

-Dorsal surface of head and propleura with large areas pale yellow to brown with black puncture.....*sundata* (Say)

3. Trochanters dark fuscous; scutellum lacking pale median line .....*sulcifrons* Stål

-Trochanters pale; scutellum usually with pale median line. *tumidifrons* Downes

*N. sulcifrons* is usually collected in grassy habitats (McPherson 1982) and is recorded through much of the eastern and central United States, south to Georgia, Texas, New Mexico and Arizona. Froeschner (1988) and Rider (1989) summarize the records for the US states. To these can be added the following new state records.

COLORADO: 1♀, Boulder, Flagstaff

Cn., 5800' (1705 m), 8.viii. 1961 (J.R. Stainer); 1♂ 1♀, *id*, 11.vi.1961; 1♀, Boulder, 12.vi.1961 (B.H. Poole); 2♀, Mt. Evans, 9800' (2987 m), Doolittle Ranch, 10.viii. 1961 (B.H. Poole); 1♂, Nederland, Science Lodge, 9500' (2896 m), 1.vii.1961 (J.R. Stainer); 1♂, *id*, 6.vii.1961; 1♀, *id*, 9000' (2743 m), 29.vii.1961; 3♀, Nederland, Caribou, 8700' (2652 m), 7.viii. 1961 (J.R. Stainer). OKLAHOMA: 1♀, Texoma Lk., 15.vii.1954 (J.G. Chillcott). SOUTH CAROLINA: 1♀, Aiken, 24.viii. 1957 (W.R. Richards); 1♀, Montmorenci, 23.vi.1957 (W.R.M. Mason) [CNC].

Little is known about the life history and habits of *N. trilineata* (McPherson 1982). It is recorded from Alaska (Scudder 1997) (1♂, Fairbanks, 16.vi.1952 (J.H. Hartley) [CNC]) and south in the United States to California, Colorado, Wyoming and Nebraska (Froeschner 1988; Rider 1989).

*N. tumidifrons* is a Cordilleran species recorded from California, Oregon and Washington, in addition to British Columbia. It occurs in grassy habitats, and in British Columbia is confined to southeastern Vancouver Island, and the dry southern interior of the province. *N. undata* is much more widely distributed, occurring in grassy habitats from Alaska to California in the west, and from Newfoundland south to North Carolina in the east (McPherson 1982).

The fifth species in North America, *N. cavifrons* Stål, occurs from Virginia south to Georgia and South Carolina (New Record: 1♀, SC, Montmorenci, 23.vi.1957 (W.R.M. Mason) [CNC]) in the east. There are records from Arizona, California, Oregon, Texas and Utah in the west (Froeschner 1988; Rider 1989), but the early reports of this species from British Columbia (Stoner 1926; Downes 1927) are in error, as these records refer to *N. tumidifrons* (Downes 1935).

##### *Trichopepla grossa* Van Duzee

BC: 1♂, Osoyoos IRI, 'Brights Winery', *Purshia* assoc., BGxh1 AN, Pitfall trap V2-4, 2.vi.-7.vii.1994 (G.G.E. Scudder) [UBC]; 1♀, Fairview, White Lake, Big

sage assoc., BGxh1 SWm, 7.vii.1996 (G.G.E. Scudder) [UBC].

*T. grossa* is a Cordilleran species, previously recorded from California, Colorado, Idaho, Oregon and South Dakota (McDonald 1976). Four other species of *Trichopepla* Stål are recorded from Canada (Maw *et al.* 2000), and *T. grossa* is most similar to *T. aurora* Van Duzee, which in Canada is also confined to British Columbia. McDonald (1976) gives a key to separate the species. *T. grossa* has the abdominal connexiva rather uniform pale brown or yellowish marginally, the scutellum has a pale yellow tip, and the base of the pronotum and coria are concolorous with rest of the dorsal surface. In contrast, *T. aurora* has an alternating pattern of black and pale brown on the abdominal connexiva, the tip of the scutellum is concolourous and not pale, while the base of the pronotum and the coria are usually clearly roseus.

#### Family THYREOCORIDAE

##### *Galgupha ovalis* Hussey

In Canada, first reported from Alberta and British Columbia in Maw *et al.* (2000), without data. Now also known from Saskatchewan. Specimens examined: 57♂ 82♀.

AB: Elkwater, 15.vi.1955 (George E. Ball) [UA]; Gull Lake, 8.vi.1929, 14.vi.1929, 22.vi.1929 (E.H. Strickland) [UA], previously determined as *G. nitiduloides* (Wolff); Medicine Hat [LM]; CFB Suffield, NWA, 26.v.1994, 16-28.vi.1994, 16-29.vi.1994, 28.vi.1994, 28.vii.-16.viii.1994, 16.vi.1995, 29.vi.1995, 31.vii.1995 (A.T. Finnamore) [APM]. BC: Chopaka, 12.v.1983 (S.G. Cannings); Chopaka, SATH habitat, BGxh1 SN pitfall trap CH6-2, 23.vi.-18.vii.1996 (J. Jarrett); Fairview, White L., Big sage assoc., BGxh1 SWm, 7.vii.1996 (G.G.E. Scudder) [UBC]; Enderby, 22.viii. 1920 (W. Downes) [UBC], as *G. atra* A. & S. in Parshley (1921), Downes (1927) and Walley (1929); Keremeos Creek, 2000' (607 m) sagebrush flat, fall trap, 9.vii.1982, 16.vii.1982, 23.vii.1982 (H. Kirk) [UBC]; near Oliver, 22-23.v.1958 (G.E. Ball) [UA]; Oliver,

29.v.1924 (P.N. Vroom) [PFC]; Oliver, 26.v.1945 (D. Blair) [UBC]; Oliver, IRI, 'Water tower', *Purshia* assoc., BGxh1 AN, pitfall trap U2-4, 1.vi.-7.vii.1994 (G.G.E. Scudder) [UBC]; Oliver, McIntyre Cr., 3000' (915 m), 29.v.1958 (H. & A. Howden) [CNC]; Oliver, 5 mi. N., 21.v.1958 (H. & A. Howden) [CNC]; Oliver, 8 mi. N., 18.v.1958, 19.v.1958 (H. & A. Howden) [CNC]; Osoyoos, 21.v.1924 (K.F. Auden) [PFC]; Osoyoos, 19.v.1958 (H. & A. Howden) [CNC]; Osoyoos, 49°03'N 119°31'W [Desert Centre], BGxh1 8PD/2AN:P, pitfall trap, 19.vii.-17.viii.1996, 23.vi.-28.vii.1997, 27.vii.-17.viii.1997, 17.viii.-21.ix.1997 (J. Jarrett) [UBC]; Osoyoos, East Bench, 22.viii. 1995 (G.G.E. Scudder) [UBC]; Osoyoos, Haynes Ecol. Res., 11.v.1982, 15.v.1985 (S.G. Cannings) [UBC]; Osoyoos, Haynes Ecol. Res., BGxh1 AN, recovery after fire, pitfall trap, 9.vii.-7.viii. 1994 (G.G.E. Scudder) [UBC]; Osoyoos, IRI, Inkaneep, *Purshia* Assoc., BGxh1 AN, pitfall trap T5-5, 6.vii.-9.viii.1995 (G.G.E. Scudder) [UBC]; Penticton, 17.v.1985 (R.J. Cannings) [UBC]; Quesnel, 11.vii.1948 (G.J. Spencer) [CNC]; Rock Creek, 7.vi.1959 (L.A. Kelton) [CNC]; Ross Lake, Okanagan Falls, 5.vi.1959 (R.E. Leech) [CNC]; Vaseux L., 5.vii.1981 (S.G. Cannings) [UBC]; Vaseux L., 2000' (607 m), 13.vi.1983 (R.J. Cannings) [UBC]; Vaseux L., 2-3 mi. E., 24.v.1958 (G.E. Ball) [UA]; White L., Okanagan Falls, ex. *Plantago*, 6.vii.1985 (R.J. Cannings) [UBC]. SK: Cypress Hills Prov. Pk., Rte. 221, 27.4 km. E. Pt. Walsh prairie, 18.v.1976 (Danny Shpeley, George E. Ball) [UA]; Regina, 2.vi.1943 (P. Larkin) [CNC].

*G. ovalis* has been reported to occur on *Pycnanthemum* and *Vernonia*, and in the United States ranges from Massachusetts west to Montana, and south to Florida, Arizona, Texas and Guatemala (McPherson 1982). McPherson (1982) provides a key to separate *G. ovalis* from the other three species reported from Canada (Maw *et al.* 2000). In *G. ovalis*, the metapleura laterally are impunctate, the corium has a distinct ridge inside the costal

groove, the scutellum is gradually declivent posteriorly, and the posterior border of the pygophore in the male, when viewed from below is weakly concave, and the dorsal rim lacks numerous long setae posteriorly.

#### Family TINGIDAE

##### *Stephanitis takeyai* Drake & Maa

BC: 17♂ 33♀, Richmond, ex. *Pieris japonica* (Thunb.) D. Don, 31 September 2001 (R. Costello) [CNC, UBC].

*S. takeyai* is an alien species in North America, first reported on *Pieris japonica* (Japanese andromeda) at Greenwich, Connecticut in 1946 (Bailey 1950). Subsequently, it has been reported in several other eastern states (Dunbar 1974; Wheeler 1977) where it also occurs in nursery and landscape plantings on *Lindera bezoin* (L.)

Blume (spicebush) and *Sassafras albidum* (Nutt.) Nees (Wheeler 1977).

The occurrence of this tingid, commonly called the Andromeda Lace Bug, in British Columbia represents the first record of this alien species in Western North America. It is likely the result of a separate introduction via nursery stock.

*S. takeyai* can be separated from *S. rhododendri* Horvath, another alien species in Canada that has separate introductions in both the east and west in Canada, by its more inflated and higher pronotal hood, its shorter lateral carinae on the pronotum, and by the much darker markings on the hood and hemelytra. The paranota are almost vertical in *S. takeyai*, whereas in *S. rhododendri* they are more flared (Bailey 1950).

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## REFERENCES

- Bailey, N.S. 1950. An Asiatic tingid new to North America (Heteroptera). *Psyche* 57: 143-145.
- Downes, W. 1927. A preliminary list of the Hemiptera and Homoptera from British Columbia. *Proceedings of the Entomological Society of British Columbia* 23: 1-22.
- Downes, W. 1935. Additions to the list of B.C. Hemiptera. *Proceedings of the Entomological Society of British Columbia* 31: 46-48.
- Dunbar, D.M. 1974. Bionomics of the andromeda lacebug. *Stephanitis takeyai*. *Memoirs of the Connecticut Entomological Society* 1974: 277-289.
- Froeschner, R.C. 1960. Cydnidae of the Western Hemisphere. *Proceedings of the United States National Museum* 111: 337-680.
- Froeschner, R.C. 1988. Family Pentatomidae Leach, 1815. The Stink Bugs, pp. 544-597. In T.J. Henry and R.C. Froeschner (eds), *Catalog of the Heteroptera, or True Bugs, of Canada and the Continental United States*. E.J. Brill, New York.
- Knight, H.H. 1927. Descriptions of twelve new species of Miridae from the District of Columbia and vicinity (Hemiptera). *Proceedings of the Biological Society of Washington* 40: 9-18.
- Maw, H.E.L., R.G. Footitt, K.G.A. Hamilton and G.G.E. Scudder. 2000. Checklist of the Hemiptera of Canada and Alaska. NRC Research Press, Ottawa.
- McDonald, F.J.D. 1976. Revision of the genus *Trichopepla* (Hemiptera: Pentatomidae) in North America. *Journal of the New York Entomological Society* 84: 9-22.
- McPherson, J.E. 1982. The Pentatomidea (Hemiptera) of Northeastern North America with emphasis on the fauna of Illinois. Southern Illinois University Press, Carbondale and Edwardsville.
- Paiero, S.M., S.A. Marshall and K.G.A. Hamilton. 2004. New records of Hemiptera from Canada and Ontario. *Proceedings of the Entomological Society of Ontario* 134 (2003): 115-129.



- Rider, D.A. 1989. Review of the New World species of the genus *Neottiglossa* Kirby (Heteroptera: Pentatomidae). *Journal of the New York Entomological Society* 97: 394-408.
- Schuh, R.T. 2001. Revision of New World *Plagiognathus* Fieber, with comments on the Palearctic fauna and the description of a new genus (Heteroptera: Miridae: Phylinae). *Bulletin of the American Museum of Natural History* 266: 1-267.
- Schwartz, M.D. and R.T. Schuh. 1999. New genera and species of conifer-inhabiting Phylinae plant bugs from North America (Heteroptera: Miridae). *Journal of the New York Entomological Society* 107: 204-237.
- Schwartz, M.D. and G.G.E. Scudder. 2001. Miridae (Heteroptera) new to Canada with some taxonomic changes. *Journal of the New York Entomological Society* 108(2000): 248-267.
- Schwartz, M.D. and G.G.E. Scudder. 2003. Seven new species of Miridae (Heteroptera) from British Columbia and Alaska, and synonymy of *Adelphocoris superbus* (Uhler). *Journal of the New York Entomological Society* 111: 65-95.
- Scudder, G.G.E. 1997. True Bugs (Heteroptera) of the Yukon, pp. 241-336. *In* H.V. Danks and J.A. Downes (eds), *Insects of the Yukon. Biological Survey of Canada (Terrestrial Arthropods)*, Ottawa.
- Scudder, G.G.E. 2000. Heteroptera (Hemiptera: Prosorrhyncha) new to Canada. Part 1. *Journal of the Entomological Society of British Columbia* 97: 51-56.
- Stoner, D. 1926. Pentatomoidea from western Canada. *Canadian Entomologist* 58: 28-30.
- Wheeler, A.G. Jr. 1997. Spicebush and sassafras as new North American hosts of andromeda lace bug, *Stephanitis takeyai* (Hemiptera: Tingidae). *Proceedings of the Entomological Society of Washington* 79: 168-171.

